

Notice of Allowability	Application No.	Applicant(s)	
	10/708,628	LUCKEY JR. ET AL.	
	Examiner	Art Unit	
	Teresa M. Bonk	3725	

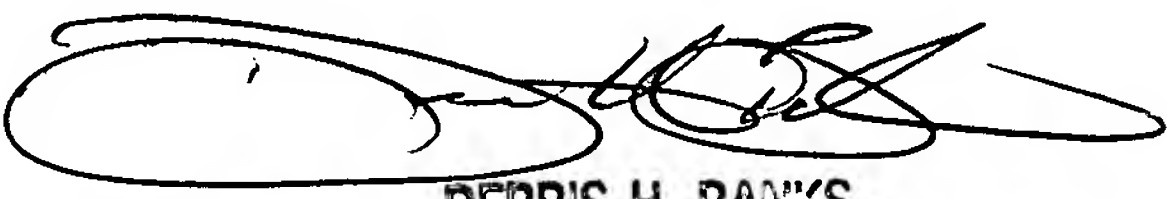
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application received on 3/16/2004.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

- Attachment(s)**
- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |



DERRIS H. BANKS
SUPERVISORY PATENT EXAMINER

NOTICE OF ALLOWANCE

Allowable Subject Matter

1. It is in the opinion of the examiner that the art of record neither anticipates nor renders obvious “An apparatus for removing a part from a forming tool and supporting the part to maintain a formed shape, the apparatus comprising: a support member having a surface contoured to conform to a formed shape of the part and an aperture disposed in the surface for directing a pressurized gas toward the part to cool the part and cause the part to be released from the forming tool without being contacted by the support member; and a manipulator for moving the support member a predetermined distance from the part while the part contacts the forming tool; wherein the surface supports the formed shape of the part when the part is removed from the forming tool to inhibit distortion as the part cools.”

It is also in the opinion of the examiner that the art of record neither anticipates nor renders obvious “A method for removing a part from a forming tool and supporting the part to maintain a formed shape with an apparatus, the method comprising: positioning the apparatus a predetermined distance from the part; directing a cooling gas toward the part at a first velocity with the apparatus to cause the part to be released from the forming tool; detecting the release of the part from the forming tool; providing the cooling gas at a second velocity to facilitate uniform cooling of the part; moving the apparatus and part away from the forming tool; and removing the part from the apparatus when the part is cooled to a temperature at which the part independently maintains the formed shape.”

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2. Further searching by the examiner yielded additional prior art as follows:

Brinas et al. (US Patent 6,799,450) discloses a method of stretch forming an aluminum metal sheet and handling equipment for doing so having a “removal device 5” with what is considered to be a support member (gripping elements 15 with contact points 35, Figure 2), a manipulator (robot 25) for moving the support member, and nozzles that are attached to the removable device where forced air would aid in cooling the part prior to removing the part from the tool preventing part distortion, (Column 3, lines 7-24).

Ryntz et al. (US Patent 6,694,790) discloses a mid plate process and equipment for the superplastic forming of parts from plural sheets having what is considered to be a support member (mid plate 40 with a mid plate bore 78) which can be placed by a manipulator (robot 90) between the upper and lower dies, Column 5, lines 45-64), “pressurized air or other inert gas for super plastic forming of the blanks,” Column 5, lines 40-44.

Spina et al. (US Patent 5,306,190) discloses a forming process for a sheet of perforated metal and process implement device having what is considered to be a support member (metal plate 15) and an aperture (multitude of holes 17) “to enable gas to flow through it and, owing to the speed of flow, to heat the mask quickly,” (Column 4, lines 8-12).

Juhl (US Patent 6,619,094) discloses a method and apparatus for forming a metal sheet under elevated temperature and air pressure having a drawing mold with a contoured mold surface including a plurality of holes 4 through which pressurized air forming a cushion between the workpiece and the surface of the mold.

Marinoni et al. (US Patent 5,392,630) discloses a unit and method for feeding semi finished parts on to a forming machine, particularly a press having what is considered to be a manipulator (robot handling fixture 34) with what is considered to be the support member (gripping unit 37 and first and second elements 38 and 39).

3. However the above prior art fails to disclose a reasonable combination of “An apparatus for removing a part from a forming tool and supporting the part to maintain a formed shape, the apparatus comprising: a support member having a surface contoured to conform to a formed shape of the part and an aperture disposed in the surface for directing a pressurized gas toward the part to cool the part and cause the part to be released from the forming tool without being contacted by the support member; and a manipulator for moving the support member a predetermined distance from the part while the part contacts the forming tool; wherein the surface supports the formed shape of the part when the part is removed from the forming tool to inhibit distortion as the part cools,” and “A method for removing a part from a forming tool and supporting the part to maintain a formed shape with an apparatus, the method comprising: positioning the apparatus a predetermined distance from the part; directing a cooling gas toward the part at a first velocity with the apparatus to cause the part to be released from the forming tool; detecting the release of the part from the forming tool; providing the cooling gas at a second velocity to facilitate uniform cooling of the part; moving the apparatus and part away from the forming tool; and removing the part from the apparatus when the part is cooled to a temperature at which the part independently maintains the formed shape.” Therefore, it is concluded by the examiner that claims 1-20 of the present invention are allowable.

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4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

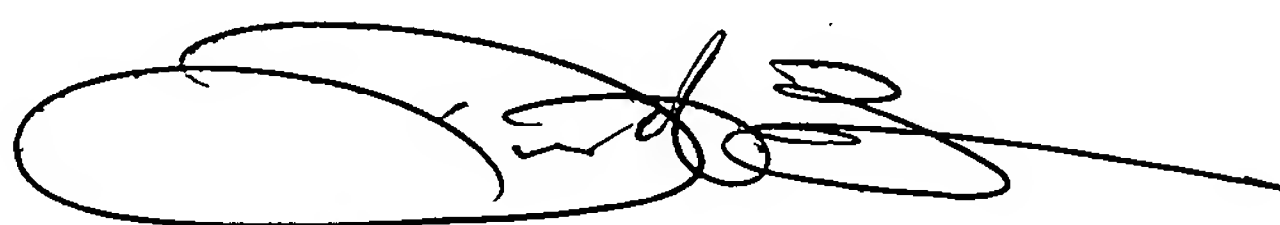
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa M. Bonk whose telephone number is (571) 272-1901. The examiner can normally be reached on M-F 7:30AM - 5PM with alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-9900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Teresa M. Bonk
Examiner
Art Unit 3725



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TECHNOLOGY CENTER 3700